

**Notice of Allowability**

Application N .

10/563,497

Examiner

Fred M. Teskin

Applicant(s)

TONTI ET AL.

Art Unit

1713

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☒ The allowed claim(s) is/are 17-34.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☒ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 052406
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

**Examiner's Amendment/Comment**

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It was not executed in accordance with either 37 CFR 1.66 or 1.68.

**Reasons for Allowance**

The following is an examiner's statement of reasons for allowance:

Claims 17-34 are allowable over the closest prior art cited in the Search Report, viz., EP 0819706 and WO 01/25296.

The claimed invention is a process for polymerizing at least one alpha-olefin, including a step of obtaining a prepolymerized metallocene-based catalyst by:

"continuously contacting at least one alpha-olefin with a metallocene-based catalyst system in a loop reactor at a temperature ranging from 25°C to 70°C, wherein

(i) the alpha-olefin and metallocene-based catalyst system is in a liquid medium;

and

(ii) an average residence time of the metallocene-based catalyst system is not more than 30 minutes;

obtaining a prepolymerized metallocene-based catalyst system comprising a polymerization degree ranging from 60 to 500 g per gram of the metallocene-based catalyst system ..." (Claim 17, ll. 3-13).

EP '706 discloses a supported metallocene catalyst that, in one embodiment, can be pre-polymerized by contacting a catalyst/co-catalyst mixture with olefin monomer prior to being introduced into a polymerization reaction zone, which contains additional monomer (parag. 25). Contacting of the catalyst/co-catalyst mixture and monomer is said to occur in a pipe or tubular reactor **16** (Fig. 1), which is the only type of pre-polymerization reactor proposed. Mention is made of a residence time of the reaction mixture within the pre-polymerization reactor of less than 1 minute and a tubular reactor temperature of preferably no greater than 30°C (parag. 58) and in Example V, an aged slurry (solid catalyst component/triisobutylaluminum) is pre-contacted with propylene for 5 seconds and then charged into the polymerization reactor.

However, the use of a *loop* pre-polymerization reactor to obtain pre-polymerized metallocene-based catalyst with a *polymerization degree as claimed* is nowhere taught nor suggested in EP '706.

WO '296 illustrates a continuous process wherein a metallocene complex catalyst is fed to two reactors in series: bulk propylene pre-polymerization (9 min. residence time at 20°C) and loop bulk propylene polymerization (Example 14). Performing the pre-polymerization in a loop reactor at a temperature ranging from 25°C to 70°C is neither taught nor fairly suggested. Moreover, pre-polymerizing in a loop

Art Unit: 1713

reactor at 20°C leads to fouling in the successive polymerization step, as shown by the applicants' comparative test data (Specification, Tables 1 and 2).

Thus, the closest prior art cannot be found to teach or fairly suggest the use of a loop pre-polymerization reactor under the claimed conditions of temperature and average residence time to obtain a pre-polymerized metallocene catalyst system.

Accordingly, claims 17-34 are deemed to define allowable subject matter and passed to issue.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Application/Control Number: 10/563,497

Page 5

Art Unit: 1713

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**FRED TESKIN**  
**PRIMARY EXAMINEE**  
1713

FMTeskin/06-08-06